DOCUMENT RESUME

ED 076 123 HE 004 069

| | |
|---|---|
| AUTHOR | Mayhew, Lewis B. |
| TITLE | Graduate Education in California. |
| INSTITUTION | California State Legislature, Sacramento. Joint Committee on the Master Plan for Higher Education. |
| PUB DATE | Feb 73 |
| NOTE | 63p. |
| EDRS PRICE | MF-$0.65 HC-$3.29 |
| DESCRIPTORS | *Decision Making; *Educational Change; Educational Policy; *Graduate Study; *Higher Education; Historical Reviews; *Policy Formation |
| IDENTIFIERS | *California |

ABSTRACT

This is one of a series of policy alternative papers commissioned by the California Legislature's Joint Committee on the Master Plan for Higher Education. Most of the papers are directed toward synthesis and analysis of existing information and perspectives in the area of graduate education in California. Topics cover the various aspects of graduate education, plans for graduate education, patterns of graduate education, considerations for policy decisions, and alternatives for California. A related document is HE 004 068. (MJM)

ED 076123

# GRADUATE EDUCATION IN CALIFORNIA

Lewis B. Mayhew

NOT FOR RELEASE UNTIL
MAR 4 1973
FOR INFORMATION CALL
DAN FRIEDLANDER AT (916) 445-4820

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

HE 004 669

PREPARED FOR

**JOINT COMMITTEE ON THE MASTER PLAN FOR HIGHER EDUCATION**
**CALIFORNIA LEGISLATURE**

FILMED FROM BEST AVAILABLE COPY

ED 076123

# GRADUATE EDUCATION IN CALIFORNIA

Lewis B. Mayhew

Prepared for

JOINT COMMITTEE ON THE MASTER PLAN
FOR HIGHER EDUCATION

California Legislature
Assembly Post Office Box 83
State Capitol
Sacramento, California 95814

| Assemblymen | Senators |
|---|---|
| John Vasconcellos (Chairman) | Howard Way (Vice Chairman) |
| Willie Brown | Alfred Alquist |
| Jerry Lewis | Dennis Carpenter |
| Ken Meade | Mervyn Dymally |
| John Stull | Albert Rodda |

Patrick M. Callan, Consultant
Daniel Friedlander, Assistant Consultant
Sue Powell, Assistant Consultant
Elizabeth Richter, Secretary

February, 1973

This is one of a series of policy alternative papers commissioned by the California Legislature's Joint Committee on the Master Plan for Higher Education.

The primary purpose of these papers is to give legislators an overview of a given policy area. Most of the papers are directed toward synthesis and analysis of existing information and perspectives rather than the gathering of new data. The authors were asked to raise and explore prominent issues and to suggest alternatives available to the Legislature in dealing with those issues.

The Joint Committee has not restricted its consultants to discussions and recommendations in those areas which fall exclusively within the scope of legislative responsibility. The authors were encouraged to direct comments to individual institutions, segmental offices, state agencies -- or wherever seemed appropriate. It is hoped that these papers will stimulate public, segmental and institutional discussion of the critical issues in postsecondary education.

# FOREWORD

This report is one of two policy alternative papers* prepared at the request of the California Legislature's Joint Committee on the Master Plan for Higher Education. The papers are intended to be complimentary. They were written against a background of detailed studies of graduate and professional education and state, regional, and institutional long-range planning conducted by the author from 1966 to 1972. In connection with those studies, information from a number of sources was obtained. During 1966 and 1967, visits were made to one hundred and fifty-six developed and developing universities to discover at firsthand plans for graduate and professional education to 1980. In addition, the same institutions were asked to fill out rather detailed questionnaires focused on the same subject. That effort resulted in a report by Lewis B. Mayhew and Robert A. Chapman entitled "Expansion of Graduate and Professional Education, 1966-1980," Stanford, Academy for Educational Development, 1967. An extension of that study was undertaken at the request of the Carnegie Commission on Higher Education, which was conducted through questionnairing all advanced degree-granting institutions in the country. That effort resulted in the publication of a report by Lewis B. Mayhew entitled "Graduate and Professional Education 1980 (New York: McGraw-Hill, 1970). As outgrowths of those efforts, two additional

* The other paper is entitled "The Role of Research in California Higher Education"

studies were undertaken at the request of the Southern Regional Education Board, which resulted in the publication of two research monographs: One, Lewis B. Mayhew, "Changing Practices in Education for the Professions," (Atlanta: Southern Regional Education Board, 1971); and the other, Lewis B. Mayhew, "Reform in Graduate Education" (Atlanta: Southern Regional Education Board, 1972). A further study was made through questionnaires, interviews and analysis of all statewide planning reports, to determine what plans for graduate and professional education were anticipated in each of the fifty states. Because of the preeminence of California in the expansion of graduate and professional education, a substantial proportion of the just-cited reports derive directly from recent California experience. In addition to these works of the author, relevant material was also obtained from three doctoral students working under the direction of the principal author. Fred Nelson conducted a detailed study of the relationship between public and private higher education in California, giving specific attention to emerging plans. Keith Binford compared how educational decisions were made in California with a sample of the rest of the states in the nation. Jerome Walker conducted an intensive study of the operation of California's Master Plan, in an effort to anticipate likely changes.

These studies quite naturally contributed to a definite point of view on the part of the author - a point of view which is reflected in the two policy alternative papers. Overly simplified, the previous studies revealed that there

had been an over-expansion of graduate education, and that if institutional plans were realized, the nation's universities would produce a serious oversupply of graduate-trained individuals. Plans for this excessive expansion also called for radical increases in the amount of research that university faculties would undertake, and a concomitant reduction in teaching responsibilities. Almost half of the 150 institutions examined revealed plans to reduce faculty teaching loads to one course a term or semester - with the expectation that funds for the inevitable increase in faculty size would be provided by state government.

Such plans appeared to be quite unrealistic for several reasons. Many of the institutions planning radical expansion of graduate education and research possessed neither experience nor potential for the anticipated new mission. Many states in which substantial increases in graduate education and research were anticipated had historically demonstrated an inability to support even modest higher educational efforts. Hence it appeared unrealistic that a state such as North Carolina could realistically support major graduate education and research expansion in all of its public institutions. Most plans for expansion seemed to assume an exponential increase in financial support for both graduate education and research into the foreseeable future. But local, state, and federal governments were constrained to use limited resources for serious social problems other than education. A comparison of anticipated output of advanced degree recipients with anticipated employment possibilities also suggested that the need for college faculty members

and other highly trained people had been considerably overemphasized. If university plans of the late 1960s were actually realized, the nation would be producing about 70,000 doctoral degree holders a year by 1980; but, by 1980 not more than 20,000 new degree holders would be needed in the traditional roles which they had previously occupied. Thus, the author is convinced that some retrenchment in graduate education and existing forms of research seems appropriate. Further, the author is convinced that significant changes in the nature of graduate education and research are essential, particularly if such critical problems as urban decay, environmental blight and poverty are to be solved.

Policy alternative papers dealing with such complex matters as graduate education and research are particularly difficult to prepare. Most of the issues involved in both subjects cannot be resolved through presenting hard evidence which proves conclusively that one alternative is preferable to another. There are strongly held opinions and closely reasoned arguments, and some statistical evidence as to trends. However, in the final analysis, questions such as should or should not university research be encouraged, rest on value presuppositions. It happens that in the United States, especially since World War II, much research effort has been concentrated in universities. However, other alternatives were available to the United States to meet its research requirements. For example, the creation of independent research institutes and other options have been taken

by such industrialized nations as Japan, France, and Germany. All of this means that these alternative papers must present arguments based on opinions, trends, historical antecedents and analogies, and that other interpretations and conclusions than those suggested are clearly possible.

The uncertainty of precise resolution of the issues considered in the two alternative papers dictated the methodology employed in the study. Clearly no formal hypotheses could be posited and established, nor could there be any experimental testing of conclusions. Rather the task was to explore generally the domain of opinion and practice with respect to university-based research and graduate education and to formulate ideas regarding possible directions. As a first step recently published literature was examined, including Strickland, Sponsored Research in American Universities and Colleges (Washington: American Council on EduCATION, 1967), Paul L. Dressel and Donald R. Come, Impact of Federal Support of Science (Washington: National Science Foundation: Contracts No. NSF-C-506, 1969); Harold Orlans, Science Policy and the University (Washington: The Brookings Institution, 1968), and Alvin M. Weinberg, Reflections on Big Science (Cambridge: The M.I.T. Press, 1967). Especially helpful in this review was a full review of all of the reports and sponsored research studies published by the Carnegie Commission on Higher Education. Most of those had some relevance for the subject but a few bore directly on the issues to be considered. These were: Dael Wolfe, The Home of

Science, Earl F. Cheit, The New Depression in Higher Education; Harold Orlans, The Non-Profit Research Institute; and Harold L. Hodgkinson, Institutions in Transition, and the Commission Report The More Effective Uses of Resources. All of these are published by McGraw-Hill and collectively form a substantial background for the two alternative papers.

A second technique to be used was to discuss with or correspond with scholars in other parts of the country who were dealing with the same issues in various states. Among those were Kenneth Anderson, examining research and graduate education in Kansas; Paul L. Dressel, examining the same matters in Michigan; John Millett, who had written exhaustively about the subjects as they pertain to Ohio; and Lester G. Anderson, doing the same for Pennsylvania. In all, some thirty scholars were contacted either in person or through correspondence to obtain information for these papers. Next, letters were sent to the heads of state systems of higher education in the more populous states - such as New York - requesting Master Plans, policy statements and opinions about possible new directions. Almost a hundred percent response was obtained. Similar letters were sent to the heads of the three regional Compacts and the Education Commission of the States. To obtain information about California, letters were sent to the chancellors of all branches of the University of California and the presidents of the larger state universities, requesting plans, reports, policy statements and opinions. While the information received varied from campus to campus, several campuses provided rich and substantial information (notably the University of California, Berkeley;

the University of California, Los Angeles, and California State University, San Jose). After digesting this information, visits were made to the central offices of the University of California and the California State University and Colleges, as well as to several campuses within each system. Generally, in a day of interviewing, conversations were held with principal administrative officers and individuals who seemed to possess relevant information. As an item of serendipity, during late June and July the author conducted a seminar on higher education policy for representatives of some twenty-five different institutions throughout the nation. To gain benefit from the collective experience represented in the seminar, the issues facing California were posed and discussed comparatively with issues faced in other states. The next and last device was, of course, to reflect on this welter of information and to compose the two reports. Ideally, the reports, when drafted, should have been submitted to a panel of experts for criticism. However, time limitations prevented this step from being taken. Hence, what results in the form of the two alternative papers are the author's own thoughts, based on the kinds of experiences described in this introduction.

It should be clearly pointed out that the two subjects of the papers are highly controversial and stimulate strong feelings on the part of people holding radically different viewpoints. Thus, commentary on the subjects is likely to be controversial although the author has made a serious attempt to present all sides of the issues being analyzed. It

is hoped that these papers contribute to essential wide-ranging discussion on the part of many consistituencies, for it is only out of such discussions that sensible state policy can emerge.

TABLE OF CONTENTS


| | Page |
|---|---|
| Foreword | i |
| 1. Expansion of Graduate Education | 1 |
| Background | 1 |
| Post-War Era | 2 |
| California | 3 |
| Forces for Expansion | 3 |
| Barriers | 6 |
| 2. Plans for Graduate Education | 8 |
| Nationally | 8 |
| California | 10 |
| Implications | 12 |
| 3. Patterns of Graduate Education | 19 |
| Professional Education | 19 |
| In the Arts and Sciences | 21 |
| 4. Considerations for Policy Decisions | 29 |
| State Needs | 29 |
| Institutional Appropriateness | 30 |
| Cost-Benefit Analysis | 31 |
| Other Economic | 32 |
| Effect on Quality of National Life | 34 |
| Student Mix | 34 |
| Limitations and Barriers to Change | 36 |
| Practices in Other States | 39 |
| 5. Alternatives for California | 42 |
| Maintain Status Quo | 42 |
| Reduction | 43 |
| Reorientation | 44 |
| Expansion | 45 |
| Financing Options | 47 |
| Conclusion | 50 |

# EXPLANSION OF GRADUATE EDUCATION

## Background

Graduate education emerged after World War II as the fastest growing segment of American higher education. After early and faltering steps, resisted by many who believed college education should be character formation and transmission of liberal culture, American institutions adopted major elements of German university education (Ph.D. degree, seminars, laboratories, libraries, scholarly journals and the like) and gave graduate education its characteristic form when Yale granted the Ph.D based on residence, examination, and a thesis reflecting original research. Until World War II, graduate education enjoyed a steady growth and an equally steady drumbeat of criticisms which have a peculiarly contemporary sound. Graduate education distorted institutional energy away from undergraduate problems. The Ph.D degree was a research degree ill suited for the preparation for teaching for which it came to be the accepted credential. The Ph.D program was too long, attrition rates of candidates too great, examinations were irrelevant, and the thesis - far from original research effort - was typically sheer drudgery. The Master's degree - which originally had been granted in due course to all Bachelor's degree holders who wanted it, stayed out of trouble and paid the modest graduation fee - became an earned degree, without purpose, structure or rationale. Critics were against the diploma mentality which required that college teachers

possess the Ph.D. degree even though it was irrelevant to actual requirements of college teaching.

Post-War Expansion

But after World War II, and especially after Sputnik galvanized public opinion and the Congress began to appropriate large sums for graduate education and research, graduate enrollments began to mount and graduate education began to be seen as the most desirable role for college professors. Graduate opening fall enrollments increased from 0.2 million in 1955 to 0.6 million in 1965, and to almost a million in 1970. This figure could conceivably reach 2.5 million in 1980, an enrollment equal to all collegiate enrollments in 1952.[1] During this post-war period, long established graduate institutions such as Berkeley, Stanford, Michigan, Harvard and Yale increased their graduate programs and enrollments (by as much as 200%) and several hundred developing institutions either entered graduate work in a major way, (Michigan State, North Carolina State) or aspired to enter the Ph.D. field through expanding Master's programs first and then adding Ph.D. programs to especially strong departments (the California State University and Colleges is a good example of this desire).[2]

---

[1] K. G. Simon and M. G. Fullam, Projections of Educational Statistics to 1975-76. (Washington: U.S. Office of Education, 1966.)

[2] L. B. Mayhew and R. A. Chapman, Expansion of Graduate and Professional Education, 1966-1980. (Stanford: Academy for Educational Development, 1967.)

## California Expansion

The pattern in California was similar to that for the nation, except evolving at a somewhat faster rate. Berkeley expanded its recognized capacity, UCLA and Davis moved quickly into large graduate effort, and the more recently created comprehensive campuses emphasized the primacy of graduate education and research. In the private sector, Stanford's growth resembled that of Berkeley while the University of Southern California and the Claremont Graduate School could be compared to the newer branches of the University of California. During this period, the state colleges evolved from teacher preparation institutions into complex university-like structures with such varied graduate programs that the colleges in aggregate came to be the major producers of Master's degree holders. The larger more complex campuses such as San Francisco State and San Jose State aspired to be able to award doctoral degrees.

## Forces for Expansion

This expansion of graduate work resulted from the confluence of a number of forces, the valance of any one of which is difficult to assess, but the significance for California is obvious. First, the society seemingly demanded large numbers of highly trained manpower to run a complicated technological society. Graduate training was presumed to be the best way of preparing such people. Thus, anticipation of large college enrollments led to development of programs to prepare their teachers. The assumption that

research and development would be ever more important in the society led to elaborate research training programs. Increased sophistication of the technology required more and better trained engineers, and emerging social welfare programs required trained people to conduct them.

A second force was simply the expansion and proliferation of knowledge which produced sub-specialties requiring trained scholars to exploit their potential. So significant is this expansion of scholarly fields that if in 1972 a major research university wished to slow the growth of graduate work to zero but still wished to remain a vital research center, its programs would still expand at rates of 2 to 3% per year just to keep abreast of the expansion of knowledge.[3]

Thirdly, the post-World War II period, until 1970, was a time of faculty shortages. The members of the lowest birth rate group (Depression-born people) were called upon to educate the highest birth rate cohort people (post-war population explosion). Available faculty members wanted the opportunity to offer graduate work and to engage in research, and institutions wishing to recruit faculty had no recourse other than to provide graduate opportunities. Even relatively small liberal arts colleges entered graduate work as an attraction for capable faculty.

---

[3] This estimate is based on conversation with about 150 graduate deans.

But faculty members were not alone in demanding graduate programs. Presidents interested in increasing the prestige, size and financial strength of their institutions saw graduate work as a major instrument through which to achieve their desires. It was the graduate centers which received great outside support and it was the graduate institutions which received preferential treatment from state appropriations and private benefaction. Academic excellence implied graduate work and research, and presidents across the country planned to lead their institution in a leap to excellence. Some did, such as Stanford; but some went bankrupt in the effort, such as the University of Pittsburgh.

In some states (California and Florida are good examples) a serious attempt was made to provide for rational growth of graduate work by assigning diversified role and scope of programs to different institutions. But even this phenomenon produced expansion. In California, Missouri and Florida the simple act of designating campuses as comprehensive universities fired faculty and administrator imagination and led to the creation of both Master's and Doctoral programs - some needed and some not.

A minor, but on some campuses still potent force for expansion, was the simple availability of space or designated funds. A new chemistry building almost inexorably produced expansion of graduate work. And the availability of federal funds for specific activities led institutions to expand their capacity so as to take advantage of new funding.

Political pressures also played a role. The people of Mobile, Alabama, wanted their own comprehensive university and had the political power to obtain it, even though the state was scarcely able to support the University of Alabama and Auburn University. Some of the expansion of campuses of the University of California may have been in part politically inspired as the University sought to combat the growing enrollments and significance of state colleges scattered throughout the state. Perhaps the clearest example of political motivation for expansion was the rapid evolution of Southern Illinois Normal College into Southern Illinois University emphasizing graduate education and research - largely because Southern Illinois' political leaders sought to combat the growing political hegemony of the northern part of the state.

To these should be added discrete forces. A particularly vigorous department head could double or triple enrollments. Accidents of mix of faculty also produced expansion, or the recruitment of a faculty with members having close ties to sources of extramural funding.

Barriers to Expansion

There were, of course, barriers to expansion of graduate work and research and some of these which were operative in the 1950s and 1960s have intensified in the 1970s These quickly summarized were:

1. Financial constraints

2. Limitations imposed by extra-institutional agencies

3. Legislative reluctance to support expansion

4. Lack of adequate land or facilities

5. Institutional rivalries leading sometimes to stalemate

6. Lack of suitably qualified faculty or staff

7. Lack of qualified and interested students

8. A political climate antagonistic to graduate work

9. A disciplinary deadend, with no possibilities for logical mutation.

## PLANS FOR GRADUATE EDUCATION

### Nationally

Institutional plans for graduate education as of 1968 were clear and almost universal throughout the country - steady expansion. It was assumed that federal support for graduate education would continue to expand and that increasingly the states would appropriate more funds both for graduate education and faculty research. It was also assumed that the market for graduate degree holders would continue to be strong and the demand for these specialized services would continue unabated. Well established graduate centers anticipated increased enrollments but with some stabilization of program proliferation. Developing institutions expected first to expand Master's programs and eventually to enter doctoral work at substantial magnititude. Some 150 institutions not offering doctoral degrees in 1968 expected to be doing so by 1980. If all serious plans were realized by 1980, the nation's universities would be producing between 67,000 and 70,000 doctorates per year and between 450,000 and 500,000 Master's per year.[4]

By 1970, however, some of these plans were being re-evaluated in the light of a number of apparently unexpected developments. First, the capacity to produce graduate degree holders expanded during the 1960s to such an extent that very real oversupplies in most fields appeared by 1970 along with the possibility of a serious oversupply by 1980,

---

[4] Lewis B. Mayhew, Graduate and Professional Education 1980. (New York: McGraw-Hill, 1971.)

assuming graduate degree holders were employed as they had been in the past. (Obviously, if the doctorate came to be required for elementary school teaching, the oversupply would disappear). Many large graduate programs stressing research training assumed a steady increase in federal spending for research which would employ Ph.D. holders. However, a Republican administration began serious cutbacks in federal spending at the same time that foundations and other sources of funds began to redeploy their grants from higher education to other social concerns. This slowdown was accentuated by a downturn in the nation's economy which, coupled with continued inflation, made graduate education a real financial liability. Beyond doubt, the student protests of the late 1960s were also a factor. Their activities caused many people to wonder about the validity of a continued education which led to a possible generation of revolutionaries. In some states which had increased support for higher education, responsible officials saw a limit to the states' resources and reached the conclusion that graduate education was the culprit in bringing states close to bankruptcy.

Institutional response to these new conditions was varied with still unpredictable results. A few of the larger prestige graduate centers announced reductions of graduate enrollments and some were able to make good on their resolve. But many of the developing institutions, still desirous of the presumed benefits from graduate education, continued to plan expansion in their quests for university

status. In Virginia, for example, in the fall of 1971, VPI demanded permission to offer the Ph.D. in English, even though Ph.Ds in English were in perhaps the greatest oversupply.

California[5]

In California, institutional plans and aspirations have followed national trends rather closely. During the late 1960s the campuses of the University of California expected continued increases in graduate work and that the state, as well as the federal government, would continue to increase financial support for research. In the large state colleges, Master's programs were being increased and faculties and administrations exerted pressure for permission to offer doctoral work. One reason why the authorized joint doctoral programs were not exploited is that to do so might jeopardize requests for full doctoral-granting authority.

Once the seriousness of the oversupply of graduate degree holders was realized, and the realities of the depressed economy of higher education accepted, some changes in institutional posture were adopted. Berkeley and UCLA apparently tried to limit graduate education and throughout the University of California system lower enrollment projections were adopted for planning purposes. However, on some of the

---

[5] These summaries are based chiefly upon conversation with campus administrators and examination of campus planning documents.

newer campuses, faculty and administration continued to press for program expansion so that full comprehensive university status could be achieved. Budget requests still reflected desire to increase graduate education and some attempts were made to rationalize away the several studies which indicated a growing oversupply of graduate degree holders. However, on the off chance that graduate education might truly be in for a long-term decline or at least a long-term static period, the University of California became more concerned both about the quality of undergraduate education and undergraduate enrollments.

The state colleges reacted similarly. First, pressure for permission to offer the doctorate seems to have diminished, although interest in a new degree - the Doctor of Arts - seems to have increased. Secondly, the Chancellor's office argued for and eventually won a change of name so that some campuses became state universities. It was hoped that university status would alleviate faculty feelings of being second-class citizens and would perhaps ease the tensions which produced demands to offer doctoral work. The California State University and Colleges also revealed a new concern about undergraduate education and enrollments and took steps to counter the trend for more and more students to enter community colleges as freshmen with plans to transfer subsequently to four-year institutions. But plans for Master's programs still seem expansive, particularly in

some of the newer multi-disciplinary areas.

The private institutions have behaved similarly. Stanford attempted to limit graduate enrollments and to make up for some of the revenue thus lost by expanding its undergraduate enrollment. In one year, for example, it anticipated 150 fewer doctoral students and their fellowship stipends, so accordingly accepted 150 more undergraduate students and increased the number of California State Scholarship holders it would accept. At the same time, it began a four-year budget adjustment program to bring income and expenditures into balance. The program has resulted in the elimination of some graduate programs, e.g., Speech and Drama, and will result in more eliminations during the two years 1972-74.

Implications

The implications of these recent modifications of plans for graduate education must be stated as alternatives and probabilities because the changes have come about so suddenly that no concrete evidence is available. If Berkeley, UCLA, Davis, Stanford and the University of Southern California did reduce graduate enrollments and slow the creation of new programs - and if the other branches of the University of California slowed or stopped program expansion - the net result could be a decrease in graduate enrollments and degrees awarded, with a corresponding decrease in expenditures. However, so great are the pressures for expanding graduate work that without external constraints these reductions are not likely to happen. Reductions at Berkeley could be more

than offset by increases at San Diego.

If the human capital argument is accepted, i.e., that trained manpower is a major economic resource for the state - and if it is assumed that much of the present oversupply of trained manpower could be reduced through redeploying professional people into new and needed fields, e.g., social planning, problems of the central city, environmental problems - then the changed plans of the universities could have an adverse effect on the state's economy. But, if the counter argument were true, that social gains from highly trained manpower are not nearly so great as has been supposed, then obviously the effect of reduced graduate education would have no negative and perhaps even a beneficial effect on the economic life of the state. Evidence regarding this complex phenomenon is so slight and so mixed that a clear-cut conclusion is next to impossible to reach. However, in the absence of persuasive evidence of definite benefits to the economy derived from increases in graduate education, one line of argument is at least plausible. It runs: sharply increased costs of higher education in California during the 1960s were highly correlated with increased levels of graduate education, increased research, and decreased teaching loads. Any major reduction in graduate education and research should result in lowering per unit costs of higher education. (Differing appropriations according to lower division, upper division and graduate education would account for this). A compromise position on the matter is

implied by Dael Wolfe who, after reviewing available studies of graduate education cautions that:

> A policy of deliberate restraint on the production of doctorates runs counter to many widely accepted values. The doctrine that over the long run society and the economy can productively absorb all of the highly trained people who can be produced is rather deeply ingrained. This view should temper drastic efforts to cut production to fit anticpated demand, if only because demand can be underestimated. However, the doctrine of infinite absorptive capacity does not justify a careless and highly expensive laissez-faire approach to the number of doctorates produced. Absorptive capacity is flexible, but it does not provide a rationale for unlimited expansion, particularly when society rather than the individual bears most of the cost.[6]

Much more direct on this issue is the policy statement of the Carnegie Commission on Higher Education, which implies that the national, and presumably the state's economy would not be adversely affected by a reduction in the annual total cost of higher education. It argues that there should be such reductions in expense so that by 1980 the annual total cost would be 41 billion rather than the 51 billion which would be expended if present rates of increase continued.[7]

---

[6] Dael Wolfe and Charles W. Kidd. The Future Market for Ph.Ds.,(SCIENCE Vol. 173, 27 August, 1971, p. 791.)

[7] The More Effective Use of Resources. (New York: McGraw-Hill, 1972.)

One major way of effecting such savings would be through curtailment of graduate programs - restricting support to only the larger suppliers of doctorates.

Revision of plans and aspirations of both the University of California and the California State University and Colleges can have several different sorts of implications for undergraduate education. If the University is truly convinced that its own best interests will be served by giving more attention to undergraduate education and by actually increasing the numbers of undergraduates served, several things would happen. The expansion of the proportion of lower division students attending community colleges would be slowed somewhat, thus deviating still further from the intentions of the Master Plan of 1960. The quality of undergraduate education on the University campuses should be improved and perhaps some time of senior professors should be redirected from graduate education and research to on-campus problems. Serious reductions in graduate work cannot help but produce relocalization of faculty interests after almost two decades of delocalization of interest to off-campus concerns (research, consulting, etc.).

If the posture of CSUC were to prevail, i.e., that the state universities and colleges and the community colleges should be the chief instruments of undergraduate education, then a different pattern would emerge. The size of the University campus would be reduced, accommodating mostly graduate and professional students. The size of CSUC campuses and community colleges would swell, which might or

might not be beneficial for undergraduates. If it produced even more overcrowding of some of the larger campuses, even more dehumanized education than now exists would be produced. However, if adequate space and financing were provided, indicating that the state did care as much for undergraduate education as it did for research and graduate education, the dream of the scholar-teacher might be realized. However, if U.C. and CSUC continue present practices, e.g., slower growth of graduate work at Berkeley, UCLA and Davis, expansion of graduate work at the other campuses and steady expansion of Master's work at state universities, the situation of undergraduates would remain either unchanged or become worse because of continued attention directed from them to graduate programs.

Plans and aspirations of the California public institutions formulated during the 1960s were bound to increase costs. Rates of program expansion, salary increases and the like of the 1960s would have produced a national cost of higher education by 1980 equal to 3.5% of the Gross National Product. The cost in California would have mounted still further because of the nature of the California system in which most campuses of the University were striving to become comprehensive research-oriented institutions and CSUC campuses were struggling to achieve some parity with U.C. However, if those plans were altered, and if the scope of graduate programs were reduced significantly, and if several related changes were made at the same time, a reduction in

per unit costs could be obtained - about 20% by 1980.[8] The Carnegie Commission on Higher Education believes this to be realistic without hurting higher education. Applying the Commission concept to California would produce a new profile for higher education in the state. Berkeley, UCLA and Davis would continue to stress graduate work while the other campuses would deemphasize it. State universities and colleges would remain out of doctoral work and would slow the growth of Master's work. At the same time, U.C. and CSUC would increase the size and variety of health science programs (medicine, nursing, etc.)

It seems obvious that plans during the 1960s for expansion of graduate work would produce an oversupply of graduate-trained manpower. The surplus of Ph.Ds in most fields and the surplus of trained teachers which began to be apparent in 1970 is persuasive evidence. What seems to be emerging, assuming some slight reduction in graduate enrollments, is the belief that at least through 1990 the society will be able to use most of its graduate-trained manpower in relevant ways, but that individuals will be required to accept positions different from the career roles they had envisioned for themselves. Research-oriented Ph.Ds, for example, may not enter university work and quite possibly will be engaged in applied work in business, government or industry. Thus, an intellectual proletariat does not seem in the making at least for several decades. And it may be that a policy allowing growth of graduate education even

[8] Ibid.

though degree holders will experince discontinuity between their education and work is sound policy if only because assumptions upon which limitations would be based can be proven wrong by events. The wide swings in supply and demand for engineers is instructive. But, as Dael Wolfe observed, unrestricted growth is dangerous because oversupply could so quickly prove to be reality.

## PATTERNS OF GRADUATE EDUCATION

Graduate education is not a unitary thing for which single policy decisions can be made. Assuming a single common element of being formal education taken beyond the Bachelor's degree - graduate education is varied, consisting of professional education (law, medicine, theology or education), Master's work either in professional fields or in the arts and sciences, and doctoral work in arts and sciences presumed to produce research competency in some one or another of the subjects or disciplines in the arts and sciences. While no exhaustive description of these various kinds of graduate education is warranted in a policy paper, yet some discussion may be useful to provide a context within which policy alternatives can be considered.

### Professional Education

Professional education is offered at undergraduate (nursing, teacher preparation, business and engineering), graduate (medicine, law, public administration) and both levels (social work, library science, etc.). Generally the programs are designed to prepare people to enter practice, although increasingly, professional schools offering doctoral degrees visualize the preparation of research scholars as of equal if not greater value than the preparation of those who will practice. In spite of the research-oriented programs, which partake of some of the problems of purpose and definition which plague graduate programs in arts and sciences - professional education is usually linked closely with the field of practice, and can estimate the number and kind of graduates which are in demand, and can be defended as producing certain kinds of skilled manpower a society requires. Of course, professional schools can sometimes err in predicting demand

for their graduates as recently have education and engineering. They can also allow their programs to deviate too greatly from the needs of those who would practice. During the late 1960s and early 1970s, for example, most of the professional schools have sensed this tendency, and through a number of reforms are attempting to make their programs more responsive to social needs. Thus, most of the schools - whether they be medicine, law, social work, or engineering - have attempted such reforms as earlier and more intensive field or clinical experience, greater interdisciplinary and problem-oriented work, greater use of the social and behavioral sciences (as well as greater use of mathematics), more international and intercultural emphasis, and greater freedom of election so that students can early begin specializing or broadening of experience - whichever suit their desires.

Because professional schools are linked to visible real life concerns, because they have been somewhat responsive to changing social needs, and because the need for them can be quickly demonstrated, they present few policy issues. There is, of course, the matter of costs (how many medical schools can a state afford) and the matter of redundancy (institutions like to maintain law schools as being both inexpensive and influence generating - but how many does a state really need?) But as compared with Master's programs in arts and sciences (which no one seems to understand) and doctoral programs (which prepare people to do research but

send the majority of recipients to teach), professional graduate education presents relatively few perplexities.

In the Arts and Sciences

It is graduate work in arts and sciences which really presents the difficulties which must eventually be solved through policy decisions. First, there is the Master's degree which in most of the fields in arts and sciences prepares people to do little more than to teach in secondary schools. It is not accepted as a credential for practice in such fields as psychology, anthropology, chemistry or history. It carries no presumption as to research competency on the part of a recipient. It rarely represents a coherent, self-contained sequence of courses. And increasingly in major universities it is regarded as a consolation prize for unsuccessful doctoral candidates. Yet the degree is awarded in increasing numbers each year, and programs leading to the Master's degree represent the first step of a developing institution to comprehensive university status accompanied by the right to confer the doctorate. Periodically there have been attempts to make the Master's degree into a respectable degree. In the 1950s, recommendations were advanced and supported by foundation grants that the Master's be reconstituted as the basic college teaching degree. In the late 1960s, several institutions, notably Yale, created the Master of Philosophy designed for the same purpose. Neither of these attempts succeeded and in 1973 the same uncertainties surround the degree as have surrounded it since the turn of the century. Of course, the Master's de-

gree is the appropriate credential for community college and secondary school teaching, and it may sometimes be considered an adequate background preparation for some sorts of advanced professional work, e.g., education or graduate business. Still the issue remains as to whether Master's programs should be encouraged and, if so, at what cost to achieve what benefits. This issue is particularly germane in California where the state universities and colleges have been expanding Master's programs at a rapid rate for over a decade.

The Ph.D. in arts and sciences is also a troublesome degree but for different reasons. The American Ph.D. is a widely respected degree, insuring that the holder has mastered considerable specialized knowledge and has developed some research or scholarly competencies. However, approximately half of all Ph.D. recipients enter college teaching and in some fields, such as in the Humanities, that proportion is as high as 90%. Yet the program rarely provides explicit preparation for teaching. The amount of time students spend acquiring the Ph.D. is long compared with medical or law degrees and the attrition rate of those who begin doctoral work is high compared with comparable professional programs. Historically, the Ph.D. has been criticized as being excessively specialized with preparation for it usually being increasingly narrow and specialized seminars leading to quite a narrow thesis project. Yet serious attempts to broaded the preparation of Ph.D. recipients have usually

failed because of faculty unwillingness to dilute what is and has been a respected degree. A more recent criticism, related to the charge of the narrowness of the Ph.D., derives from the present and anticipated even larger oversupply of doctorates. Many of those currently unable to find appropriate work were prepared for research in the expectation of continued expansion of research funds. When these dried up, the Ph.D. did not seem to be relevant preparation for other sorts of employment - community college teaching, for example. Proposed reform has suggested that the Ph.D. program be so modified that at least several different tracks are open to candidates - for example, a teaching track, a research track, and an applied track. Such quandries were present earlier but they assume much greater significance in 1973, when an oversupply of degree holders and increasing costs of preparing them force reconsideration of both acceptable enrollment levels and the nature of the degree.

Special reforms in graduate education in arts and sciences have been suggested which have particular relevance for the California situation. The first of these is the creation of a new degree, the Doctor of Arts, which would be specifically organized to produce college teachers. It would not be a research degree. And some applied project would be substituted for the traditional thesis. In addition, candidates would receive training in educational procedures and would have supervised teaching experiences. This degree

has been urged as a particularly appropriate offering of the California State University and Colleges, especially in light of its tradition in teaching preparation. A number of CSUC faculty and administrators wish to offer the Doctor of Arts, which will put them in doctoral work, yet not in competition with the University of California. However, the Doctor of Arts degree, except in a few places, does not appear to be viable. The new degree would likely appear as a second-class degree when compared with the Ph.D. In times of oversupply of Ph.Ds, holders of the Doctor of Arts would likely experience employment difficulties. These two facts, coupled with the tendency of faculty members to move newly created degrees close to standards maintained for the Ph.D., would gradually force the Doctor of Arts to resemble a Ph.D., thus removing the distinctiveness which was the reason for creating it. Should this happen, the next step would logically be to substitute the Ph.D. for the Doctor of Arts, and institutions which had not previously been in doctoral level work would be actively involved in Ph.D. production. Informed opinion, such as that represented on the Carnegie Commission on Higher Education, urges that no more than 100 institutions are really needed to meet the nation's Ph.D. requirements. Hence, the Doctor of Arts reform, if adopted, would be a device to add unneeded Ph.D. producers into operation.

A much less significant but related reform is the creation of a "Certificate of Candidacy" to be awarded when graduate students have completed all course work and examinations

except the preparation and defense of a thesis. This has its roots in the high attrition rates which each year produce more A.B.D.s (those who have done everything except a thesis) than Ph.Ds. Since A.B.D.s presumably have acquired all needed substantive knowledge to enable them to teach college courses, some form of certification seems warranted. Since the certificate does not imply new programs, and since simple equity almost demands recognition for successful graduate work, this reform seems generally desirable if it does not lead to abuse. The availability of the certificate might encourage departments to accept many more graduate students than would be expected to receive the Ph.D., thus keeping graduate education costs high. There already is a tendency for some departments to accept large numbers of Ph.D. candidates, use them as teaching assistants for staffing large lower division courses and then terminate them before they acquire their degrees. This is used for keeping FTE funds high but at the same time keeping the number of Ph.D.s in competition for a limited number of jobs low. If the certificate were to encourage such abuse, it obviously would be an inapprporiate reform. Similarly, if the granting of a certificate by institutions not presently offering doctoral work were to lead those institutions into full-scale doctoral work, the results would also be hurtful. This point has to be emphasized, for recent history of American higher education is replete with examples of institutions which added courses here and there - with no external monitoring - until all courses for a new program were actually available. Then comes the argument that a new

degree can be offered without any additional cost - a difficult argument to counter. Yet actually, the added cost is present - it has just been added year by year and is unrevealed until aggregate cost increases are examined.

Another kind of reform involves a serious attempt to modify the narrow specialization of the disciplinary Ph.D. through creating interdisciplinary programs such as Ph.D.s in American Studies, Genetics, or Urban Affairs. These represent a serious and laudable attempt to make doctoral work more relevant to contemporary concerns. However, these efforts have several potential side effects which should be studied carefully. Academic departments are not well organized to offer interdisciplinary programs and institutions have tended to create centers or institutes, frequently financed by temporary and external funding, as a means of offering new kinds of programs. However, there is a tendency, when these centers continue for some time, for them to resemble departments, having their own tenured faculty and their own core of disciplinary specialists. One effect is production of redundancy with the center or institute duplicating specialists appointed to departments. It is difficult to gauge how serious this problem is but at least it must be viewed as one additional inflationary factor in graduate education.

There are a number of other suggested reforms. However, only two have immediate implications for legislative policy considerations. The first of these are attempts to shorten the period of graduate study. As was indicated earlier,

doctoral study is considerably longer than most professional programs, and the cost either to the individual or the institution is correspondingly high. Since there is no evidence that greater time spent on a degree results in greater subsequent performance (indeed, there is some speculation that the more productive scholars finish this preparation earlier) it would seem desirable to shorten time spent. However, the nature of graduate work, supervised as it is by individual faculty members appointed to departments but with little supervision or monitoring, has thus far resisted major reform. If reform along these lines is to come about, some agency external to departments might at least attempt some accounting of time spent. This could lead to some budgetary constraints to prevent the excessively long careers of doctoral students.

The second is external review of specific graduate programs. During most of the history of graduate education in the United States, decisions about entering graduate work and program approval rested with individual campuses. Regional accrediting bodies did not attempt to examine graduate programs on the assumption that institutional controls and their informed opinions of people in the various disciplines were sufficient to maintain standards. Gradually, during the 1960s, statewide coordinating bodies began to review requests for new programs but did not attempt to review or evaluate existing programs. During the 1970s and beyond there may be need for closer external scrutiny of programs for several reasons. Scarce resources may require external decision as to whether existing programs are needed or war-

ranted. Developing institutions with no experience in doctoral work may require guidance and even supervision to insure that adequate standards are maintained. All institutions may require external and objective observation to insure that graduate education does not overshadow other institutional missions. In states having coordinating agencies, such as California, these agencies might be the best device for scrutiny.

## CONSIDERATIONS FOR POLICY DECISIONS

As state legislatures and others ponder policy alternatives for graduate education, there are a number of factors which should be considered. For many of these there is no firm evidence as to how the various factors should be weighed. Additionally, factors operate in opposite directions with respect to such things as expansion or retraction of graduate education. Thus, straight manpower studies might suggest retraction while socially approved affirmative action programs to educate more women and minority group members might imply expansion in spite of potential oversupply of graduates.

### State Needs

The most obvious factor is what are the state's needs for trained manpower of the sort produced by graduate and professional programs? It now seems clear that an oversupply of doctorates is in the making, particularly if doctoral degree holders are employed chiefly in universities and in a limited number of other agencies. It now also seems obvious that there are and will be shortages of certain categories of trained manpower, especially in the health related fields. It would seem wise, therefore, for states to study manpower needs much more carefully than they have in the past, and to adjust resources deployment according to need. This is no easy matter. Universities are conservative entities and do not adjust quickly to changed social needs. Even if institutions could change more quickly, little is known as to how students can be attracted into high demand fields.

Nor is there much experience with basing educational planning on manpower needs. Rather in the United States, as well as in California, planning has been based on student demand for education and willingness to pay for it, regardless of whether or not the labor force could absorb all graduates. Generally, state plans for higher education are based on a generalized assumption of the need for more college-trained people which results in almost indiscriminate program expansion. Assuming that manpower needs can be predicted, one device has been suggested. States would convene committees of manpower specialists each year to indicate areas of shortage and overage. Scholarship programs could then be tied to these findings so that students entering shortage occupations would receive financial support while those entering overcrowded fields would not.[9]

Institutional Appropriateness

A second factor has to do with institutional appropriateness of entering or conducting graduate education. During the expansionist decade of the 1960s, many institutions entered graduate education with only the barest minimum strength to do so. Faculty members had not had experience in graduate education. Library holdings were inadequate and laboratories were ill suited for advanced work. Additionally, such institutions seemed to deflect attention from traditional missions such as undergraduate education

---

[9] Richard B. Freeman, The Market for College Trained Manpower. (Cambridge; Harvard University Press, 1971, 115.)

and the preparation of teachers. The task of deciding which institutions should and should not enter graduate education is difficult. There are the examples of Michigan State University and Southern Illinois University which in the 1940s possessed few of the attributes needed for graduate work, yet which emerged by the 1970s as among the distinguished graduate schools of the country. Yet in spite of difficulties such decisions must be made. As a general principle it can be argued that only about 100 institutions have the traditions and attributes for major efforts in graduate education. For the rest of the 2,800 institutions of the country, graduate education should be approved only rarely and after full examination of the ability to maintain appropriate programs.

Cost-Benefit

Graduate education is presumably more expensive than is undergraduate work both to the individual (foregone income and the like) and the institution (more personal instruction and more expensive equipment). That increased cost should be compared with potential benefits, yet in practice this is rarely done. Programs are created because of presumed need, faculty desires, institutional quest for program coverage or for a host of other reasons. And these are all significant. However, cost-benefit analysis should figure more prominently than it has and the cost figures should be more inclusive by computing not only faculty time, space, equipment, but student time and the cost of foregone other alternatives as well. To illustrate with but one theoretical

example: Consider the 200 private liberal arts colleges which entered graduate education during the 1960s. They did so for many reasons. Chief among them was the desire to attract faculty who otherwise would have been drawn to universities. Presumably those faculty recruited for graduate instruction were experienced and required higher salaries which contributed to the cost-price squeeze of the late 1960s. Those increased costs should be included in a cost-benefit equation which can sometimes assume ludicrous dimensions - is the production of twenty Master degree recipients and five doctoral recipients worth greatly increased salary expenditures? The Carnegie Commission on Higher Education report on the financial crisis suggests as correlates of institutions in financial difficulties, rapid program expansion and steep escalation of faculty salaries during the 1960s. And the Commission's policy statement on better utilization of resources during the 1970s calls for a virtual moratorium on new graduate programs.[10]

Other Economic

There is a related economic consideration for planning graduate education policy. The conventional wisdom has long held that personal investment in graduate education was a better investment than in other commodities. The reasoning ran like this: if a Bachelor's degree holder received X thousands of dollars in increased lifetime earnings, then a Master's degree should be worth still more and the Doctorate still more. However, this matter should be examined more

[10] The More Effective Use of Resources. (New York: McGraw-Hill, 1972.)

closely. The pattern which seems to be emerging is that roughly from 1930 to 1960 salaries for graduate degree holders increased at rates considerably less than for Bachelor's degree holders and could not be judged an excellent investment. Then during the 1960s when faculty salaries were increasing rapidly, the quality of investment in graduate work increased. Currently the picture is mixed in which the Ph.D. in some fields is a good investment if acquired at a young enough age as compared with Bachelor's degrees, while the Master's degree is only marginally profitable in most fields.[11] As the numbers of advanced degree recipients increase, thus forcing a stabilization of salary increases, even more questions can be raised as to just how wise is an investment in a graduate degree program. Not that economic returns should be used as the sole or even principal criterion in judging the worth of graduate education. However, it is a factor which should be considered, especially by those institutions which are deeply involved in Master's programs for older students who have worked and who want retraining and upgrading. The return to the individual through increased lifetime earnings may not outweigh the cost of acquiring the new degree (foregone income, tuition, and the like) and the increased tax yield to the state may very well be less than the cost to produce a Master's degree recipient.

---

11 Richard B. Freeman, The Market for College Trained Manpower. (Cambridge: Harvard University Press, 1971, p. 93.)

Effect on Quality of National Life

However, other factors should be considered, such as the degree to which graduate education changes the intellectual quality of the national life. The conventional wisdom, of course, is that higher levels of education spread more widely throughout the society result in a better informed citizenry, more capable of contributing to the quality of national life. There is, however, little concrete evidence to support this belief. There is evidence that college graduates do lead different sorts of lives than do non-college attenders. They seem to be somewhat more liberal, more tolerant and more open to new experiences - but not as much so as idealists would like to see. Similar generalizations cannot be made which would indicate that those changes are modified by additional years of study. But one can theorize that the biggest changes in individuals are made during the formative late adolescent years which are spent in undergraduate study. Thereafter, as lifestyles solidify, substantial change should not be expected. Thus, if graduate education is to produce differences in the quality of life, it would be through producing specialized leaders who contribute through their professional roles. This may or may not be so, thus the factor - while it should be discussed - must remain moot until more data is available.

Student Mix

A different sort of consideration involves the question of student mix on a given campus. It is argued that undergraduate students profit from the presence of a reasonable

number of advanced students who in turn receive stimulus from their younger colleagues. But there may be a critical point beyond which a disproportionately high number of older students would so change the composition of the campus as to produce undesirable side effects. During the late 1960s, for example, the fact that large graduate-oriented universities were the scenes of some of the more violent student dissent has been attributed to an unfavorable mix. But this is for the most part speculation. Some graduate students were active in student protest and others were not. A more likely interpretation would be that sheer size and rapidity of increase in enrollments were more involved in producing conditions out of which student dissent grew. Since the American phenomenon of linking graduate education to an undergraduate college is the result of an historical accident, the issue as to whether there are real values to be obtained from perpetuating the pattern can be seriously debated. There is logic in conceiving of some institutions as being exclusively graduate and professional (provided, of course, that means of adequate funding were developed) while many other institutions would be exclusively undergraduate. The notable educational successes of the stronger liberal arts colleges in producing disproportionately large numbers of leaders, scholars and scientists is persuasive of the values of a faculty devoting full time to the undergraduate students.[12] It is true that the pattern of a mix of under-

---

12 Robert H. Knapp and H. B. Goodrich, Origin of American Scientists. (University of Chicago Press, 1952,) and Robert H. Knapp and I. L. Greenbaum, The Younger American Scholar, (University of Chicago Press, 1972.)

graduate and graduate education is so deeply ingrained in American life that it may be impossible to change. But if the Legislature is to explore fully various alternatives, this matter should be pondered. Until the 1960s many of the state's universities were essentially undergraduate institutions enrolling but a relatively few graduate students. What was true once could be restored.

Limitations and Barriers to Change

One factor which could discourage restoration of the essentially undergraduate institution is the significant change which has taken place on the state college campuses. Many of the larger ones have become, in fact, universities with faculties who treasure graduate work as much as do faculties of other universities. Even if we were to conceptualize an ideal model of a state system consisting of a few graduate centers and a large number of undergraduate campuses, to dismantle the graduate components of the CSUC and some of the U.C. campuses might prove to be impossible. The intentions of the Master Plan of 1960 to divert large numbers of undergraduate students to junior colleges were never really carried out in large part because evolution of the senior institutions was too far advanced. The proportion of lower division, upper division and graduate students at the University of California, for example, remained almost unchanged between 1957 - 1967. If this is so, then the latitude of the Legislature to modify graduate education policy is seriously restricted and the range of avail-

able alternatives limited.

Another factor which may also limit freedom to modify graduate education policy is the nature and growth of knowledge itself. As fields of knowledge expand and subdivide within institutions or systems of institutions, growth takes on a dynamic of its own. As was earlier indicated, a major graduate institution wanting to limit graduate enrollments to zero expansion, but still wishing to maintain a viable academic position of excellence, would still need to expand graduate enrollments at rates of 2 - 3% a year just because of the expansion of fields of scholarship. Legislative mandate for campuses or systems to declare a complete moratorium on graduate programs, if enforced, would change completely the character of those campuses. Efforts to do so may prove to be too large a risk.

Another factor which must limit the freedom of action to decrease graduate enrollments is the strong pressure for institutions to engage in affirmative action to increase graduate education for women and minority groups. There is well documented social need to bring minority group members into the intellectual mainstream of American life and to encourage women to assume greater leadership roles. This poses a dilemma at a time when graduate enrollments may be too large for the needs of society for highly trained manpower. If minority group and female enrollments are expanded but at the same time overall enrollments are reduced, large numbers of qualified male majority group members would be excluded from the opportunity for graduate work. The alternative

would be to allow enrollments to continue to grow with the attendant consequences of increasing costs and potential oversupply of graduates. But there are other issues as well. Minority group members (Black, Native American, Mexican-American) are generally financially more deprived. If they are to receive graduate education they must be provided substantial financial assistance. Simply to encourage minority group members to enroll in graduate study is a hollow policy, for without financial support the poor cannot attend graduate school. Thus the total cost for graduate education which includes large numbers of minority group members must be expected to increase.

Underlying many of these factors is the unresolved nature of graduate education. If it is chiefly to provide trained manpower, the policy based on manpower studies can be created and likely would result in a slowdown in overall increases in enrollment and major reorientation of the nature of some programs. If, however, it is designed to increase the general educational level of the population on the assumption that as more highly educated people are produced they will enter and improve many fields not now requiring such advanced training, (Ph.D. nurses and elementary school teachers, for example), then an expansionist policy is dictated. There are sincere proponents of both positions but probably no way to resolve the difference other than through serious and protracted discussions by educators, legislators, and laymen - a device which the Joint Committee has been using well in its various public sessions.

Practices in Other States

Graduate education in other states is handled differently than in California (with its segmented system of higher education). New York maintains two systems according to region, with each system maintaining institutions of all levels. The City University of New York maintains junior and senior colleges involved in doctoral graduate education, under the auspices of a centralized Graduate School and University Center. Master's level work is handled by the individual senior institution. Presumably that centralized device develops programs which are needed, but also prevents faculties from developing desired but unnecessary programs. The rest of the state is served by the State University of New York through University Centers emphasizing doctoral work and a variety of college centers some of which do not offer Masters level work. The SUNY system is an interesting blend of broad guidelines and monitoring by the system office coupled with considerable latitude for individual campuses to develop programs deemed needed, for which the campus has adequate resources. Faculty members in the SUNY system do not seem to reflect the feelings of second class citizenship, which are found so frequently on the CSUC campuses in California. Nor does there appear to be the rivalry between the University Center and the College Centers which is so in evidence between the California State University and Colleges and the University of California. It may be that some of this apparent good feeling will wear off as the New York system enters a period of retrenchment. During the 1960s, the State radically increased appropriations for the

system. Currently the University has declared a moratorium on all new doctoral programs and has undertaken a systematic review of existing ones.

The State of Illinois has also rejected the California segmented system in favor of several mixed systems involving some regional division and some mission division. There are the University of Illinois and the University of Southern Illinois systems and the system of regional universities. It is assumed that the University of Illinois and the University of Southern Illinois will always be the chief suppliers of graduate degree recipients. However, there is no statewide prohibition placed on the others regarding graduate work. Control over the program expansion is assigned to a statewide coordinating agency and, of course, ultimately to the Legislature which must appropriate funds.

While there are differences between other states, as a general rule, more states have not attempted to restrict levels of education to segments of the higher education system, except, of course, restrictions placed on junior or community colleges. The six Kansas institutions are responsible to one board which can limit programs but does so on a non-categorical basis. Michigan maintains three major universities and some regional institutions, each with enough freedom to allow for development of graduate work, even including doctoral work, on every campus.

As to whether the California segmented system or some of the looser systems are more effective, there is considerable opinion and theory but little actual data. The Univer-

sity of California, Berkeley is ranked as a more generally outstanding university than is the University of Michigan but this may be as much because of climate and the Bay Area as because of the system. Other than that comparison - which is really irrelevant - there is no persuasive evidence regarding costs, access to higher education, quality of education, public regard for education, or educational contribution to the society which would establish that the California segmented system is better or worse than Michigan's lack of such a system. It is true that the California community colleges allow a higher proportion of high school graduates to enter higher education, but at the same time the state lags behind other states in the production of actual degree recipients.[13] Thus, with respect to the fundamental issue as to whether or not the segmented system of higher education as established by the California Master Plan should be retained, modified, or abolished, the decision must be made on grounds other than established effectiveness or ineffectiveness. But before that issue can be resolved an even more fundamendamental issue must be examined and resolved. That is, should the state encourage an expansion of, contraction of, or the status quo of graduate education?

---

13 A. J. Jaffee and Walter Adams, "Two Models for Open Enrollment," Universal Higher Education. (Washington: American Council on Higher Education, 1971, 143-168.)

## ALTERNATIVES FOR CALIFORNIA

### Maintain Status Quo

One reasonable alternative is to retain the broad provisions of the Master Plan and the general tendencies which it has produced, making perhaps a few modifications to improve feelings and the functioning of the system. Such a posture would allow the various campuses of the University of California to continue to develop their graduate and research emphases, but perhaps at a slower rate and in response to the interaction of various forces. It would encourage the state universities and colleges to expand joint doctoral programs, perhaps create Doctor of Arts degrees, and expand or continue Master's programs in response to demand. Both UC and CSUC would continue to accept undergraduate students but would be encouraged to improve still further their achievement of balances between lower division, upper division and graduate students which the Master Plan envisioned.

This alternative would probably satisfy all public segments of higher education, particularly if salaries of CSUC professors were made equitable, and if that system were granted some explicit funds for research and faculty development. But it would also produce steady pressures for increased cost of higher education and very likely serious oversupply of degree recipients. At the same time it would allow the state to continue to receive the large share of federal research funds which it had during the 1960s. However, there is dissatisfaction with the Master Plan which

would continue if the principal provisions were maintained.

Reduction in Graduate Education

A second alternative would be a sharp reduction in graduate education either through retaining the segmented system or changing it. This would involve prohibition of doctoral work of any sort at CSUC, limitation of enrollment at the graduate level, a moratorium on creation of new doctoral programs at the University of California and perhaps the elimination of doctoral programs on the newer and smaller campuses. Such a posture might also include mandated teaching loads for all faculty members, careful monitoring of uses of faculty time or even legislated priorities for the admission of students. One draconian attempt which was made by the legislature of Michigan set these admissions priorities for the senior institutions: (1) Michigan graduates of junior colleges, (2) Michigan high school graduates, (3) Michigan undergraduate transfer students from out-of-state institutions, (4) Michigan college graduates entering graduate work in Arts and Sciences, (5) Out-of-state graduates entering fields having short supply of professional workers.

Such an extreme posture would, of course, precipitate political controversy in the state and make higher education even more a political entity. It surely would change the character of the University of California which would become less attractive to out-of-state students, professors,

or funding. But a modified version might produce some beneficial results to offset the hurtful ones. If graduate work at the doctoral level were restricted to the University of California at Berkeley, Los Angeles and Davis - and those programs in existence on the other campuses - and if strong budgetary influence were used to persuade the newer campuses to dismantle doctoral programs, some overall statewide reduction in the cost of higher education might be accomplished (especially if this were also accompanied by ceilings being placed on some categories of Master's enrollments). It is this sort of modified reduction of graduate education which the Carnegie Commission on Higher Education had in mind in its program to reduce rate of increase of expenditure for higher education by 1980.

Reorientation of Graduate Education

A different sort of alternative would involve a reorientation of graduate education emphases. This option would seek to reduce enrollments in many Master's and doctoral programs in the arts and sciences on the ground that there may be an oversupply of doctorates and the demand for Master's degrees is limited. Resources from these programs would be redirected to the professional fields, especially the health related fields in which there is a shortage of trained people. This alternative, while seemingly logical and based upon what manpower evidence is available, would likely be extremely difficult to accomplish. As was implied earlier, educational programs require considerable time to initiate and perhaps an even longer time to terminate

(tenured professors, equity in physical plant and the like.) However, several devices might be attempted. A differential financial formula could be developed with differential appropriations made to fields according to whether expansion or contraction were desired. Flow of students could be affected through differential scholarship programs, e.g., nursing candidates receive assistance, history candidates do not. The Coordinating Council for Higher Education could develop guidelines and could be given authority to monitor them. The system could be required to audit and report on faculty, enrollments, costs and level of program developments with the goal of encouraging conformity to program guidelines. Since institutions do have vested interest in existing or desired programs, some statewide agency could be created to develop program guidelines based on manpower or other considerations. Similar financial and guidance sanctions could also be developed to insure that an applied research emphasis was also stressed as part of the professorial orientation of graduate work.

Expansion of Graduate Education

The fourth alternative obviously would be an expansion of graduate education especially through the Master's degree. The motivating principle would be an upgrading of the educational level of the entire state and could be accomplished through one or all of several devices. Various state agencies could change credentialling requirements upward to stimulate student demand. The Legislature could encourage institutions to create three-year Bachelor degrees expecting

that such an act would increase both the number of people with Bachelor degrees but also encourage many to obtain a Master's degree before beginning work. This phenomenon could be furthered through changing community colleges into three-year Bachelor degree-granting institutions. Presumably, many students who now receive the Associate of Arts or the Associate of Science degree and do not transfer would remain to obtain a Bachelor's degree for one additional year's work.

If this alternative were based upon several principles, it might be adopted without greatly increasing the costs of higher education. It would be assumed that the Master's degree did not imply research orientation nor competence. It would also be assumed that doctoral programs would be restricted so that an increase in Master's degrees did not also produce an unneeded expansion of doctoral work. Two principal values could be accomplished: the significance of the Bachelor's degree as a credential would be curtailed, thus encouraging greater attention to Bachelor's programs as preparation for life. Secondly, such a posture would fit in well with the University-Without-Walls concept and could ultimately produce both viable but smaller campus-based programs and viable extended degree programs. It might also reduce enrollments at the University of California thus leaving that institution free to concentrate more energies on advanced graduate and professional work.

Two sub-alternatives should also be mentioned as means of expansion if that is the desired policy. One is to encourage cooperative arrangements with private institutions to expand graduate work, whether this be to assist Stanford

to expand evening and summer Master's programs or Chapman to cooperate with state-supported schools to offer more Master's level work to military and educational personnel at their own schools or institutions. There are currently a number of graduate programs offered by private institutions which would be strengthened by cooperation and financial support from the public sector. The essential of this approach would be use of some public funds for private institutions.

A second similar approach would be cooperative programs between the state educational institutions and other kinds of organizations whether they be public schools, corporations or research installations. Currently, for example, Rand Corporation is planning to offer the doctorate and a number of corporations offer formal work equal to the Master's level. If the state wished to expand graduate education without massive new building programs, exploiting these developments of education being offered by non-educational organizations would be one important possibility.

Financing Options

Assuming that other policy alternative papers will deal with the intricate problems of finance, no detailed discussion of overall financial issues will be undertaken here. Rather, the most salient issues of direct relevance to graduate education will be stated and several potential postures indicated as alternatives.

First, there is the question as to how much graduate students should be expected to pay for their own education

and how much support should be supplied them from any of a variety of external sources. Conventional wisdom crystallized during the 1960s held that graduate students received considerable scholarship and fellowship assistance in contrast to medical and law students who drew mostly on their own puerile resources. However, that belief is not substantiated by the most recent survey of the characteristics of American graduate students. It indicated that for all graduate students only about 17% received fellowship support and 30% received stipends for work done as teaching or research assistants. The majority supported themselves through non-academic jobs, working spouses, savings, aid from parents, or loans. The proportion of candidates for the Ph.D. who received fellowship support is somewhat higher (26.5%) as is the proportion supported as teaching or research assistants (41.8%). But even those figures call into question the conventional wisdom.[14]

One policy issue is whether graduate students should be expected to support themselves, or should they receive institutional support in some form? If either extreme were adopted, the net result would be a reduction in the number of graduate students. If no support would be provided, only the relatively affluent could afford to attend thus eliminating many minority group students. If full support (tuition, books, subsistence) were to be provided for all graduate students accepted, the institution would be forced to limit

---

[14] John A. Creager, The American Graduate Student: A Normative Description. (Washington: American Council on Education, 1971. p. 19).

enrollments because existing sources of funds are simply inadequate. Of course, some modification of the extremes is possible. For example, stringent means tests could be applied which would insure minority group members a high proportion of support; or a stringent ability test could be used which likely would have the reverse effect.

Secondly, there is the issue as to whether the state should assume a major role in financing graduate education through appropriations for salaries, facilities, fellowships, libraries and the like, or should seek to shift the burden to the federal government. There is the argument that since graduate education is a national resource and responsibility, the bulk of the costs should be supplied from federal sources. This position argues that there should be perhaps more than 100 graduate institutions supported largely by federal funds, thus allowing the states to concentrate on undergraduate education. However, there is no evidence that such a radical shift is likely in the near future. The issue remains one of determining levels of state support and determining which institutions to support. Present practices seem to insure a steady expansion of graduate programs at both the University of California and the California State University & Colleges. Changing formulas upon which appropriations are based can result in either increasing or decreasing graduate enrollments depending on the overall policy decisions.

Thirdly, there is the issue - assuming the inevitability of some form of federal support for graduate education - of which of several available forms would be most desirable from the standpoint of the State of California. Five principal types are available: (1) categorical aid through grants, contracts or loans to support specific programs; (2) aid to students through loans, fellowships and the like; (3) grants to institutions to be used at institutional discretion; (4) tax relief for educational expenses; and (5) revenue sharing. Thus far categorical aid has been the major source of funds. This has resulted in great affluence for some institutions with little assistance given to others. The differentials between the amounts received by the CSUC and UC are illustrative. Obviously, this issue will ultimately be resolved by the federal government, but presumably the decision could be influenced by statewide positions. Generally, categorical aid and institutional aid would be likely to increase graduate enrollments, whereas aid which went to students would tend to have the opposite effect. This assures that the cost of graduate education to the institution is considerably higher than the cost of undergraduate education.

## Conclusion

At the risk of oversimplifying this highly complex matter of graduate education in California, the principal policy alternatives open to the Legislature are:

1. Revising the Master Plan, either to allow the California State University and Colleges to expand their graduate programs up to and including doctoral level work or to change the segmented system of California higher education. This latter option, if it could be accomplished, might result in a substantially different mix of graduate programs and could either expand or contract the size and scope of graduate education.
2. Encouraging the expansion of graduate education or seeking to accomplish some retrenchment. Depending on the decision regarding this issue, there are available techniques to accomplish either goal.